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**United States Patent** [19]

Takagi et al.

[11] **Patent Number:** 5,335,273[45] **Date of Patent:** Aug. 2, 1994[54] **PORTABLE TELEPHONE AND  
MULTIFUNCTIONAL PROTECTIVE  
HOUSING THEREFOR**[75] **Inventors:** Hisamitsu Takagi, Inagi; Akihide  
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Tomura, Tokyo, all of Japan[73] **Assignee:** Fujitsu Limited, Kawasaki, Japan[21] **Appl. No.:** 756,587[22] **Filed:** Sep. 9, 1991[30] **Foreign Application Priority Data**

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[51] **Int. Cl.<sup>5</sup>** ..... H04M 1/00[52] **U.S. Cl.** ..... 379/433; 379/434[58] **Field of Search** ..... 379/433, 434, 58, 144;  
395/149, 153, 173; 248/688[56] **References Cited****U.S. PATENT DOCUMENTS**4,153,822 5/1979 Ueda et al. .... 379/370  
4,897,873 1/1990 Beutler et al. .... 379/433  
5,024,414 6/1991 Drain ..... 248/688**FOREIGN PATENT DOCUMENTS**276403 8/1988 European Pat. Off. .... 379/144  
2538978 9/1984 France ..... 379/144  
56-6544 1/1981 Japan ..... 379/370  
61-7145 1/1986 Japan ..... 379/433  
62-185440 8/1987 Japan .  
3-85949 4/1991 Japan ..... 379/433*Primary Examiner*—James L. Dwyer*Assistant Examiner*—Jack Chiang*Attorney, Agent, or Firm*—Staas & Halsey[57] **ABSTRACT**

A portable telephone having a cover to which a functional module such as an electronic calculator or a clock module is detachably mounted. The cover is rotatably mounted to a body of the portable telephone. Plural kinds of functional modules are replaceably mounted to the cover, thereby making the portable telephone multifunctional. Also disclosed herein is a construction that a multifunctional module mounting member is rotatably mounted to the body of the portable telephone, and a desired functional module is mounted to this mounting member by plug-in connection employing connectors.

**2 Claims, 14 Drawing Sheets**